

Spanish To Build More High-Speed Lines

Further high-speed lines are to be built in Spain, following the commercial success in recent years of Renfe's AVE passenger services on the country's initial 471km high-speed link between Madrid and Seville.

THE new Madrid-Barcelona high-speed line--currently under construction and due to open in 2004--represents the next stage in the development of a standard-gauge high-speed network in Spain which will not only provide serious competition against airlines on major long-distance routes, but should also attract more passengers to rail in regions where highway transport has been dominant.

The Spanish government will finance the ambitious high-speed expansion programme through an annual capital payment to the state-owned Railway Infrastructure Authority (GIF), which is responsible for building and maintaining new lines.

It is estimated that the cost of completing the 651km Madrid-Barcelona line will be about Pesetas 1000 billion (\$US 6.29 billion), while another project which has been approved by the government is the 150km Madrid-Valladolid high-speed line, costing an estimated Pesetas 250 billion.

Other proposed high-speed links still awaiting funding include a new Madrid-Valencia line, an extension of the Madrid-Barcelona line northeast to the French border, and a branch from Cordoba off the Madrid-Seville line, running south to Malaga.

Effectively, the two latter schemes would complete a seamless high-speed corridor connecting southern Spain to Paris, via a proposed extension of the French TGV network from Montpellier to the Spanish border.

Spanish National Railways (Renfe) is keen to take full advantage of this massive investment in infrastructure. It is already making plans to launch services on the initial 481km Madrid-Zaragoza-Lerida section of the Madrid-Barcelona line, which is scheduled to open in 2002, and expects to take the first steps soon in ordering a fleet of high-speed trains for introduction on the complete line from 2004.

Renfe's managing director of AVE highspeed services, Mr Juan Luis Martin, told IRJ: "The perception of high-speed rail transport in Spain has changed dramatically. Its public image today is very good as a result of our success operating the Madrid-Seville line, and this has made it easier to convince the politicians that more lines should be built.

"The construction of the Madrid-Barcelona line is now going according to timetable, and everyone is committed to the target dates for opening both sections. The line is being built for 350km/h operation, and it will be possible for us to offer an end-to-end journey time of 2h 30min. This compares with 6h 30min on the existing route.

"Madrid-Barcelona is one of the strongest corridors for passenger traffic in the world. Renfe will present a powerful challenge to the airline industry. We are considering operating services with a frequency of 30 minutes normally, and 15 minutes at peak times.

"There will be two types of service. One will be the non-stop service between the two cities, while the other will provide a service with an intermediate stop at Zaragoza, and, occasionally, at Lerida. At the moment, we are studying the preferences of our customers, so that we can exploit properly the commercial potential of the new trains."

Renfe plans to mirror its success in competing against air with AVE between Madrid and Seville on the Barcelona route. In 1991, prior to the opening of the Madrid-Seville line in 1992, the air:rail market share split was 67.2:32.8 in favour of air. Today the split is 18.5:81.5 in favour of AVE.

Martin told IRJ that Renfe will adopt a new approach to tendering. It intends to ask bidders to draw up a full risk-sharing package in which they would be willing to assume responsibility for the finance, design, delivery, and maintenance of the fleet, as well as offering guarantees covering train reliability and performance.

He explained that Renfe was looking closely at contractual models such as the one established in Britain recently when the passenger train operator, Virgin Rail Group, signed contracts for the supply and maintenance of train fleets by Alstom and Fiat Ferroviaria for its West Coast Main Line services (March p2), and by Bombardier Transportation for its Cross-Country services (January p2).

Martin said: "In the past, we have bought rolling stock outright from the supplier. But this time we are considering other types of deals, such as the Virgin Rail one, for example, where there is a train leasing arrangement and a services contract, and the manufacturer participates actively in the investment.

"This is the way forward. The operator, the manufacturer, and the financier will be the three main players in the contract. I hope to start the process officially in the first quarter of 2000.

"Firstly, though, we must make sure that we produce tender invitation papers which are clear enough to give everybody an equal opportunity in submitting their bids. We expect to receive a lot of interest both domestically and internationally. We will not specify the exact number of trains to be built, because we don't have to with this kind of contract."

The new trains will not be ready before the opening of the first section of the line, but Renfe has made contingency plans to extend the services provided by its existing fleet of standard-gauge AVE and gauge-convertible Talgo 200 trains.

Martin is confident about the commercial outcome. He stated: "We are still increasing passenger traffic by up to 10% annually on the Madrid-Seville line, which is an achievement considering that AVE services have been running for seven years. The total number of passengers carried last year was 4.75 million, compared with 4.39 million in 1997.

"We have moved into profit as well. In 1997, AVE made its first-ever profit, albeit very small, amounting to the equivalent of \$US 2 million. In 1998, this increased to \$US 18 million, and this year we expect to increase the figure once again to \$US 28 million.

"The public is well aware of the quality of service provided by AVE services. Our customer surveys have shown a very high level of satisfaction with the existing services, and we would expect a similar response on the new routes."

Some of the other vital benefits of new line construction were highlighted by Mr Jose Luis Villa de la Torre, director general of Renfe's operations division, which includes six 'operator' business units-- AVE, long-distance, regional, and suburban passenger units, plus the Cargas freight and Combinado intermodal units.

Villa de la Torre said: "Our main lines have become saturated, so we need these new lines. They will provide more capacity for passenger services, and will also release additional capacity for freight services on the existing lines.

"An example of what can be achieved has already been provided by the construction of the Seville-Madrid line, which has benefited both regional and commuter passenger services in the past few years.

"We expect to gain similar advantages from the new Madrid-Barcelona line. Obviously, these high-speed lines are being built to standard-gauge, while our conventional network is broad-gauge. But, with the installation of gauge-changing equipment and facilities at major passenger interchanges, we'll be able to reduce the journey times significantly to the rest of northern Spain.

"Zaragoza will have gauge-changing facilities, as will a number of other interchanges north of Madrid, including Pamplona and San Sebastian.

"The proposed Madrid-Valladolid line is equally important for the development of rail services on the northern network. We want to compete against airlines on north-to-south routes because nearly half the country's population is situated north of Madrid. We must offer better journey times.

"The investment of Pesetas 300 billion in rolling stock under our contract programme for the next four years will include about Pesetas 150 billion set aside for new high-speed trains. The rest of the money will be used to replace existing rolling stock such as regional and long-distance trains which are more than 20 years old, and older Talgo trains which will be replaced by new-generation Talgos."

Renfe's director general of infrastructure, Mr Juan Antonio Villaronte, also stressed the need for the railway to launch a serious attack on the long-distance passenger transport market.

He stated: "GIF is undertaking a large-scale upgrading programme under the present infrastructure plan up to 2007. But a lot depends upon the success of new-build projects, including the Madrid-Barcelona-French border line. Work is being carried out on the initial Madrid-Zaragoza section, of course, where the journey time will be 1h 30min.

"The other important project is Madrid-Valladolid. This line will be designed for 250km/h operation and it will provide an end-to-end journey time of one hour, compared with 2h 30min on the existing route. The most difficult section in terms of construction will be a 28km tunnel through the mountains outside Madrid.

"We hope to complete the line by 2004--I don't think that is an over-optimistic forecast because GTE has been given approval for financing by the government.

The development of this line is especially important because Valladolid is one of the transport hubs in the north."

HIGH-SPEED PARAMETERS

	Madrid-Barcelona	Madrid-Seville
Total length	651km	471km
Maximum speed	350km/h	300km/h
Minimum curve radius	7250m	3900m
Double-track platform width	14m	12.7-13.3m
Distance between track centres	4.5m	4.3m
Maximum gradient	2.5%	1.25%
Tunnel radius	6 to 7.25m	5.82m
Viaducts	26.6km []	9.85km
Tunnels	24.4km []	15.8km

(.)Madrid--Lerida (481km) section only

MADRID-BARCELONA TECHNICAL DATA

Standard gauge ballasted track with 60kg/m rails on monobloc concrete sleepers

Electrification at 25kV 50Hz

Interoperable signalling and train control--ERTMS and GSM-R